

REMARKS

In the Office Action mailed July 1, 2003, Claims 1-16 were rejected under 35 USC §112 as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention and claims 1-9, 15 and 16 were rejected under 35 USC §103(a) as being obvious in view of Uzoh (USP 6,58,579). Claims 1-16 were rejected under §103 as unpatentable over Mayer et al. (USP 6,315,883) in view of Shue et al. (USP 6,083,835).

Applicant respectfully traverses the rejections and amends the claims to clarify features that are not taught or suggested by the references.

§112

Claims 1-16 were rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 10-14 are amended to particularly point out and distinctly claim the subject matter of the invention. Applicant respectfully requests that the Examiner withdraw the §112 rejection as the amendment to claim 1 addresses the Examiner's rejection. Claims 10-14 are amended to more clearly point out and distinctly claim the subject matter.

§103

Claims 1-9, 15 and 16 are rejected under §103 as obvious in view of Uzoh. However, Uzoh is commonly owned with the subject Application. Accordingly, Applicant encloses a Terminal Disclaimer and declaration stating the subject Application and Uzoh patent are commonly owned in order to disqualify the Uzoh patent as prior art. Accordingly, Applicant requests that the Examiner reconsider and withdraw the §103 rejection of claims 1-9, 15 and 16 as unpatentable over Uzoh.

Claims 1-16 were rejected under §103 as obvious in view of Mayer et al. and Shue et al.

Under the Graham test, three factors must be evaluated: the scope and content of the prior art; the differences between the prior art and the claimed invention; and the level or ordinary skill in the art. (MPEP 706 and 2141 et seq.).

Amended independent claim 1 recites:

...

applying a conducting material layer onto a top surface of the conductive surface layer of the workpiece using one of a spin-on, spray, doctor blading or other application technique that does not involve

electroplating so that a top surface of the conducting material layer is planar, thus forming a planarized multi-layer structure that includes the non-planar conductive surface layer and the conducting material layer; and electropolishing the planarized multi-layer structure to remove in a planar manner at least portions of the non-planar conductive layer and other portions of the conducting material layer, wherein the electropolishing in the planar manner is assisted by using conducting material in the conducting material layer that electropolishes at substantially the same rate as the non-planar conductive surface layer.

Applicant submits that amended independent claim 1 is not taught or suggested by the references, that the dependent claims are also allowable over the references. In particular, amended independent claim 1 recites that the application of the conducting material layer forms a planarized multi-layer structure. Mayer et al. states that the conductive material is a conformal layer that will follow the contours of the underlying dielectric substrate 203. (see Col. 9, lines 11-19). Mayer et al. does not show or teach applying a conducting material layer onto a top surface of the conductive surface layer ... thus forming a planarized multi-layer structure.

In addition, Claims 2 and 3 further recite “annealing the conducting material layer so that at least one solute within the conducting material layer diffuse with the conductive surface layer.” The combination of Mayer and Shue do not teach or suggest the claimed invention requiring a “annealing the conducting material layer so that at least one solute within the conducting material layer diffuse with the conductive surface layer.” Moreover, Shue discloses an annealing step to further enable the chromium oxide to be formed by leaching oxygen out of the IMD layer which thickens the interface between the copper-chrome and the IMD layer. (see col. 3, lines 52-55 and 63-67). Accordingly, the annealing step of Shue teaches away from “annealing the conducting material layer so that at least one solute within the conducting material layer diffuse with the conductive surface layer.”

Claims 4, 5 and 6 require removing the material to expose a barrier layer. Applicant submits that the references do not teach or suggest the claimed invention in combination with the limitations set forth in claims from which they depend.

Claims 7, 8 and 9 require removing the material to expose a dielectric layer. Applicant submits that the references do not teach or suggest the claimed invention in combination with the limitations set forth in claims from which they depend.

Claims 10-14 are directed to various aspects of the conducting material. Applicant submits that the references do not teach or suggest the claimed invention in combination with the limitations set forth in claims from which they depend.

Claims 15 and 16 are directed to the electropolishing step. Applicant submits that the references do not teach or suggest the claimed invention in combination with the limitations set forth in claims from which they depend.

Applicant submits that skill in the art does not provide the differences between the references and the claimed invention. An engineer skilled in the art would not develop the claimed invention with these references and skill in the art.

For these reasons, Applicant submits that the claimed invention is not taught or suggested by the references alone or in combination. Consequently, Applicant submits that the pending claims are allowable over the references. Applicant therefore requests that the Examiner reconsider and withdraw the §103 rejections.

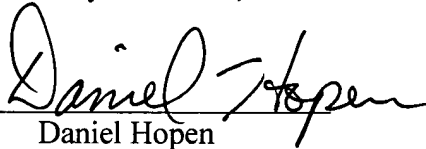
Conclusion

Applicant has amended the claims to further clarify features that are not taught or suggested by the references. For these reasons, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of the claims.

If any matters can be resolved by telephone, Applicant requests that the Patent and Trademark Office call the Applicant at the telephone number listed below.

Respectfully submitted,

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